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DEVELOPMENT PLAN FOR EAST GERMAN AUTOMOTIVE INDUSTRY
DURING SECOND FIVE-YEAR PLAN PERIOD

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Kurt Lang

Before 1950, systematic research and development did not exist in the East German automotive industry. At that time, 15 development centers in various enterprises were assigned individual tasks. The results of their work were unsatisfactory and demonstrated that under such circumstances rapid technical progress could not be achieved because of the lack of high-caliber development and research engineers and inadequate or nonexistent laboratory and experimental facilities.

The Main Administration for Automobiles and Tractors (Hauptverwaltung fuer Auto- und Traktorenbau) therefore decided to set up two central development bureaus in 1951, to facilitate rapid and accurate processing of urgent research and development tasks through a concentration of experts and existing installations. At the time, this decision was quite correct. In 1954, the Ministry of Machine Building decided to decentralize, that is, to return these tasks from the central development bureaus to individual plants.

The return to decentralization of development and research proved to be a logical step in view of the expansion of East German factories between 1951 and 1954, as it permitted the full utilization of technical improvements and progressive increases in the materials and personnel base. It also enhanced the responsibility of plant managers to stimulate competition. Thus, each individual plant became directly responsible for the quality of its products. Consequently, each plant tended to strive to reach the international level of technology in its products, to become a leader in its field, and to be able to export its products profitably to socialist and capitalist countries; this, in turn, is apt to guarantee a constant utilization of its capacity.

Examination of Operations in Light of First Five-Year Plan Experiences

It must be conceded that automobile and tractor construction did not reach the level of international techniques during the First Five-Year Plan. In the past, most developmental work was undertaken without sufficient technical and economic aims and without thorough preliminary study. Similarly, in many cases the international level of development was not sufficiently explored or was inaccessible.

Consequently, there was a lack of accurate scientific data and analyses, such as concrete long-term market information, detailed technical specifications by consumers for the different products, etc.

Developments in the automotive industry were further handicapped by a lack of clear perspectives in planning. For example, projects were initiated before a plant was designated to handle their production.

A particular handicap in the execution of orders was the quality of available material. Even where it would have been possible to compete with international standards as far as design is concerned, the deficient quality of the material was a drawback. A further mistake at the time, one which still persists, was that too many projects were started simultaneously, rendering concentration on key tasks more difficult and, at times, even impossible. Consequently, the achievements of the automobile and tractor industry were not equal to the requirements of the East German economy during the First Five-Year Plan.

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Measures for Further Development in Second Five-Year Plan

Various steps must be taken to bring about an improvement in the situation during the Second Five-Year Plan.

Every organizational measure, that is, every change in the material status, is primarily dependent on the number, qualification, and correct utilization of existing technical cadres and of the new cadres that will be added after completion of their training. It is no secret that East Germany suffers from a lack of scientists with long-term experience and knowledge in the field of automobile and tractor production. As matters stand, it may not be possible to amend this situation satisfactorily during the Second Five-Year Plan. The problem must be purposefully attacked and solved through further training of college graduates. This should be the task of engineers who have worked in research and development for long periods and have gathered considerable experience. A further aim of systematic personnel training consists in augmenting the feeling of individual responsibility among the technical intelligentsia to such an extent that they will be aware of the economic significance of their work to a greater degree than thus far.

Each task aimed at approaching and surpassing the international level of technology must be a collective task. This will result in a compact treatment of each project by the same group of professionals, and in a closer association between these men and their task. The coordination of calculation, designing, testing, technology, manufacture, and economic evaluation of the entire task, and the execution of calculations of profitability, cost analyses, and comparisons by economists, shall and must prevent a repetition of errors such as were unfortunately committed too often in the First Five-Year Plan.

Improvement of Planning in Research and Development

During the Second Five-Year Plan, improvement of technological and economic planning for research and development is essential. Almost no other sector of the automotive industry was as badly neglected during the First Five-Year Plan as research and development.

Many gaps still exist in research which can be filled only by purposeful and systematic effort. The entire developmental work must be in keeping with production trends and basic economic requirements.

Research work must no longer be conducted on the basis of intuition and personal interest of individual members of the state apparatus, research and development bureaus, or other institutions. In the future, more thought should be devoted to the preparation of annual plans for research and development tasks on a broad basis. Organizational prerequisites for this were created in 1955 by the VEB Central Development and Design Office for Automotive Construction (ZEK) and by the plant Offices for Development and Construction (BEKs), as well as by the Work Circle for Highway Traffic (Arbeitskreis Strassenverkehr) and the Scientific-Technical Council of the Main Administration (WTR).

Exchange of Scientific-Technical Experiences

A further means of speeding up the pace of development in East German automobile and tractor plants is scientific-technical collaboration (TWZ) with the USSR and the other people's republics.

In the course of the First Five-Year Plan, such collaboration did not fulfill expectations; therefore, it did not become the valuable source of information it should have been. The procurement of documentation progressed only

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slowly due to bureaucratic handling by administration offices. Data supplied were often valueless, or at least less valuable, because of belated delivery.

Finally, possibilities to acquire valuable know-how and stimulation through the study of foreign products were completely inadequate. Therefore, it is necessary to improve transportation facilities for travel abroad, as well as procurement of spare parts from abroad, including some from capitalist countries.

The exchange of ideas with foreign scientists and engineers, initiated last year, remained inadequate because its scope was too narrow and intervals between meetings were too long. A fundamental change is urgently needed. The organization of a continuous exchange of ideas with foreign experts remains one of the chief tasks of scientific-technical collaboration.

In connection with this, the importance of technological information in general should be pointed out. The automobile and tractor industry has two central bureaus for documentation and publications. Their task consists in preparing short summaries of pertinent articles in international trade magazines and in distributing them in the form of file cards to all interested enterprises. The Academy of Sciences also published occasional articles on automotive construction in its monthly technical journal; however, the effect of these two sources of information remains inadequate.

The knowledge gained from an evaluation of the entire technical press at home and abroad by the documentation bureaus has not sufficiently influenced research and development in the automotive industry. Hence, it is essential for the contemplated Institute for Automobile and Tractor Construction to undertake this documentation so as to make the results of scientific research at home and abroad speedily available to all planning stations of automotive designing.

Research and Development Tasks

After the preceding analysis of the situation in the East German automotive industry in the First Five-Year Plan, and following a critical discussion of decisive factors, the section below discusses the development plans for the industry during the Second Five-Year Plan.

Research and development tasks for 1956 and other years of the Second Five-Year Plan were debated during last year by leading experts of the industry and were again scrutinized and reviewed at the meeting of scientists and engineers of the Ministry of General Machine Building on 4 and 5 October 1955 in Karl-Marx-Stadt.

The subjects to be considered henceforth by engineers and construction experts in every development and new construction can be summarized as follows:

1. Unlimited exportability of the products.
2. Maximum use of lightweight construction techniques with minimum use of materials.
3. Maximum performance with minimum fuel consumption.
4. Maximum safety in operation.
5. Maximum life through better quality.
6. Utilization of all possibilities of economical manufacture to achieve minimum production costs.

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7. Maximum standardization.
8. Minimum repair rates.
9. Careful handling of goods in transit.
10. Efficient and durable equipment with minimum engine, gear and exhaust noise.

In this connection, it must be reiterated that other industrial branches must cooperate if these requirements are to be fulfilled by the automobile and tractor industry. This refers particularly to the metallurgical industry, the tire, lacquer, glass and accessory industries, and the automotive electric equipment industry.

Research Tasks in the Second Five-Year Plan

The following illustrates the particular tasks of the industry during the Second Five-Year Plan:

1. Otto Engines

A considerable part of the research tasks will be devoted to the improvement of two- and four-cycle "Otto" engines. Improvement of fuel injection and of the two-cycle system will continue. A further aim of research must be to increase the capacity of engines while reducing fuel consumption and weight.

2. Diesel Engines

In regard to diesel engines, research is concentrated on the combustion chamber, fuel injection, and on problems of air cooling. The aim is to increase engine performance, lower fuel consumption, reduce weight per horsepower, and produce a quieter and simpler fuel injection system, as well as to attain a considerable increase in the number of revolutions.

3. Transmission

Study should be devoted to the efficiency and performance of mechanical clutch gears with hydraulic, electric, and pneumatic controls and to torque converters, whether hydraulic or electric.

4. Chassis and Body

Comparative experiments between frameless construction and a combination [one-piece?] frame and body should be undertaken. The future use of plastics should also be explored. Further research emphasis should be placed on spring-suspension, shock absorbers, brakes, and resistance to tropical weather conditions.

Developmental Tasks for the Second Five-Year Plan

The most important aspect governing development is strict concentration on key problems and prevention of a dispersion of forces through a multitude of tasks.

1. Accessories

Accessories are of vital importance to progress in the automobile and tractor industry. Qualitative improvement of accessories is a prerequisite to better interiors which, in turn, are prerequisites to increased exports. Plants

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producing accessories are outside of the jurisdiction of the automotive industry. Therefore, the Main Administration of the Automotive and Tractor Industry should impress upon them the importance of their special tasks and the importance of meeting delivery schedules.

2. Two-Wheel Vehicles

No new developments are contemplated by the bicycle industry. Efforts will be directed toward improving present models.

Beside the Moped SR-1 now in production, second and third types, SR-2 and SR-3, are to be developed. The SR-2 will be equipped with a tank-type frame and substantial fenders, while type SR-3 will more nearly resemble a motorscooter in quality and construction.

The Pitty motor scooter with a forced-air-cooled, 125-cubic-centimeter engine is to be replaced by a travel scooter equipped with a 175-cubic-centimeter engine. This travel scooter will be equipped with an electric starter and a number of other improvements and is expected to become the ideal pillion-equipped (Zweirad) scooter for use in town and travel in the next few years.

The motorcycle program of the GDR will comprise four types in the future. Two will be equipped with two-cycle 175- and 250-cubic-centimeter engines and the other two with four-cycle 250- and 350-cubic-centimeter engines. All four types will be extensively standardized in construction and component parts, so as to promote quantity production through rational factory methods, and to hold replacement parts to a minimum.

3. Passenger Vehicles

There is no provision for development and construction of motor scooters with cabs in the next 5-year program. This was decided so as to concentrate labor, manufacturing capacities, and investment funds on economic large-scale series production of a small automobile (Type P-50) presently on the drawing board. This is a four-passenger vehicle with an air-cooled 500-cubic-centimeter Otto engine of about 18-20 horsepower capacity with a pontoon-shaped body of molded plastic. It is contemplated to produce this vehicle as a limousine and a station wagon. Understandably, details cannot be divulged at this stage.

The year 1956 is an important year in automobile production, as two new types, Model 311-Wartburg and Model P-240, will proceed from the planning stage to production. Model 311 is to replace the present Model F-9 in the VEB Automobile Works in Eisenach. Model P-240 is a larger car with a 2.4-liter, six-cylinder, four-cycle Otto engine and seats from five to six passengers. It is in production at the VEB Horch Plant in Zwickau. Detailed reports on these two new cars will be published in the near future.

4. Trucks and Buses

Truck construction will concentrate on three types with load capacities of 1, 2.5, and 4 tons which are to replace the present types of 0.75-, 2-, and 3.5-ton capacity. Six-ton trucks will not be produced in the GDR after 1957.

5. Tractors

Tractor construction will consist of two types, a wheeled tractor of 15- or 30-horsepower capacity and a tracked tractor of 60-horsepower capacity. In addition, there will be an 8-horsepower single-axle tractor for use in

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vegetable cultivation and in gardening. All tractors will be equipped with air-cooled engines. The 8-horsepower model will have a one-cylinder, two-cycle Otto engine while the 15-horsepower tractor will be supplied with either an air-cooled, two-cylinder, two-cycle Otto engine or an air-cooled, two-cylinder, four-cycle diesel engine. The 15-horsepower model will also be useful in corn cultivation. For the 30-horsepower tractor, a four-wheel, hydraulic drive is planned. In the case of the 60-horsepower tracked tractor, plans call for a 20-percent reduction in weight and the use of rubber and cast steel, or rubber and Perlon tracks.

6. Accessories

A great number of further improvements in the accessory line are needed to fulfill plan goals. Among the most important problems are: carburetors, filters, injection pumps, regulators, jets, brakes, shock absorbers, drive shafts, mufflers, radiators, and pistons.

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